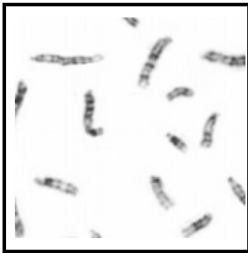


Content Checkpoint #2

**Directions: For the following questions select the BEST answer.**

Q1. Look at the image provided. What is the scientific name for the structures in the image?



- A. Karyotype
- B. Genes
- C. Chromosomes
- D. DNA

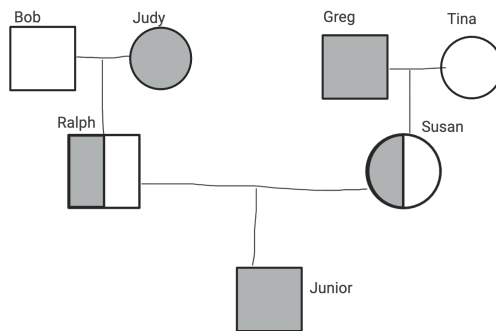
Q2. If you compare the number of chromosomes in SEX cells to that of MUSCLE cells, what is the best way to describe the relationship?

- A. Sex cells have **half** the chromosomes of muscle cells.
- B. Sex cells have **double** the chromosomes of muscle cells.
- C. Sex cells have **one third** the chromosomes of muscle cells.
- D. Sex cells have **three times** the chromosomes of muscle cells.

Q3. When looking at a karyotype, how many of each chromosome is present in a muscle cell?

- A. There are **4** of each chromosome.
- B. There are **2** of each chromosome.
- C. There are **1** of each chromosome.
- D. There are **5** of each chromosome.

Use the pedigree to answer Q4 - Q6



Q4. What is the phenotype of Ralph and Susan?

- A. Extra Big Muscles
- B. Medium Muscles
- C. Typical Muscles

Q5. What allele combination would you expect to see for Junior?

<p>A</p>	<p>B</p>	<p>C</p>
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Q6. Why doesn't Susan have the heavily muscled phenotype?

- A. Female cows cannot be heavily muscled
- B. Tina would need to be medium or heavily muscled for her offspring to be heavily muscled
- C. Greg doesn't have big enough muscles to pass on his trait to his offspring

Q7. What effect does genotype have on the myostatin protein?

- A. Genotype influences the structure of myostatin as full or partial.
- B. Genotype has NO influence on the myostatin.
- C. Genotype influences the color of the myostatin.
- D. Genotype influences the function of the myostatin, not the structure.

Q8. Why do the partial myostatin result in the extra big muscled phenotype?

- A. The partial myostatin protein grows larger due to increased protein in the diet
- B. The full myostatin proteins are weaker and cannot build muscle
- C. The partial myostatin proteins are the wrong shape and cannot send the stop message to the cell
- D. The full myostatin proteins have a structure that helps function as a muscle